REPORT
EIGHTH ANNUAL NATIONAL
RURAL ELECTRIFICATION JOB TRAINING AND SAFETY CONFERENCE

OCTOBER 23-27, 1950

HOTEL ABRAHAM LINCOLN
SPRINGFIELD, ILLINOIS

Sponsored by
Trade and Industrial Education Service, Vocational Division
Office of Education
Federal Security Agency
and
Management Division, Rural Electrification Administration
U. S. Department of Agriculture
Washington, D. C.

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COMMITTEE ASSIGNMENTS

Planning Committee

Chairman, H. C. Potthast, Wisconsin
E. H. Stovall, Mississippi
A. B. Blacklock, Missouri
J. C. Staff, Kansas
E. C. Edwards, Alabama
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Displays

R. V. White, Chairman
A. E. Becker
Glenn E. Strong
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PROGRAM

OCTOBER 23, MONDAY

8:00 a.m. Registration - Abraham Lincoln Hotel, lobby lounge

9:30 a.m. Opening Session - Ballroom, 4th floor
H. C. Potthast, Wisconsin R. E. Instructor
Chairman, Program Planning Committee

Greetings
Mayor Henry A. Eilison, Springfield
Govenor Adlai Stevenson, Illinois
I. Thomas McKillop, Chief, Management Division, Rural Electrification Administration, Washington, D. C.
W. A. Ross, Consultant, Public Service Occupations, U. S. Office of Education, Washington, D. C.
J. E. Hill, Illinois Acting State Director of Vocational Education, Springfield
Harold C. Whitman, National Director, N.R.E.C.A.
A. C. Barnes, Chairman, Illinois Job Training and Safety Advisory Committee, Carlinville

10:45 a.m. RECESS

10:50 a.m. "Some Practical Values in Rural Electrification Training"
A. B. Shehee, R.E.A. Field Safety Engineer
A. E. Becker, Manager, Association of Illinois Electric Cooperatives, Springfield

11:50 a.m. Announcements and Introductions

12:00 noon LUNCH

1:30 p.m. to 4:30 p.m. Workshops and Leaders (meeting rooms to be announced)

"Conference Leading"
E. S. Baird, Teacher-Trainer, Trade and Industrial Education, Iowa State College, Ames
E. M. Claude, Illinois State Supervisor of Trade and Industrial Education, Springfield
M. C. Wheeler, Missouri Assistant State Supervisor of Trade and Industrial Education, Jefferson City

"Human Relations"
D. W. Aiken, Dean of Student Affairs, Mississippi State College, State College
H. F. Hinton, Florida State Supervisor of Trade and Industrial Education, Tallahassee

"Human Relations" Group 2
L. L. Wingo, Illinois Assistant State Supervisor of Trade and Industrial Education, Springfield

OCTOBER 24, TUESDAY
(Ballroom, 4th floor)
Chairman, E. H. Stovall, Mississippi R. E. Instructor

9:00 a.m. "Trends in R.E.A."
I. Thomas McKillop, Chief, Management Division, R.E.A.

9:45 a.m. "Trends in Rural Electrification Training" - a panel discussion
Lewis Brown, Manager, Freeborn-Mower Cooperative Light and Power Association, Minnesota
E. A. Reid, Montana R. E. Instructor
G. E. Baker, Texas R.E. Instructor
Howard Gorham, Nebraska State Supervisor of Trade and Industrial Education
A. D. Mueller, Manager, Indiana Statewide Rural Electric Cooperative
A. B. Shehee, R.E.A. Field Safety Engineer

11:00 a.m. RECESS

11:10 a.m. "Construction Specifications"
Frank H. LaMaster, R.E.A. (Chairman)
J. E. O'Brien, Chief, Technical Standards Division, R.E.A.
C. L. Schultz, Engineer, Technical Operations and Maintenance, R.E.A.
A. B. Blacklock, Missouri R. E. Instructor

12:15 p.m. LUNCH

1:00 p.m. to 3:00 p.m. Workshops and Leaders
"Conference Leading"
E. S. Baird
E. M. Claude
M. C. Wheeler
"Human Relations"
D. W. Aiken
H. F. Hinton
L. L. Wingo

3:00 p.m. EDUCATIONAL TOUR

OCTOBER 25, WEDNESDAY

9:00 a.m. to 12:00 noon Workshop and Leaders
E. S. Baird
E. M. Claude
M. C. Wheeler
"Human Relations"
D. W. Aiken
H. F. Hinton
L. L. Wingo

12:00 noon LUNCH

1:00 p.m. EDUCATIONAL TOUR

OCTOBER 26, THURSDAY
(Ballroom, 4th floor)
Chairman, E. C. Edwards, Alabama R. E. Instructor

9:00 a.m. "Safety Demonstration" by
E. H. Kellogg, Indiana R. E. Instructor with assistance of Hendricks R.E.M.C., Danville Indiana; C. O. Stamper (Manager); Harold B. Anders; John W. Price; Herman A. Smith; Owen F. Stamper; Elvin E. Gibbs; Arlie W. Couch; Lester A. Hannes

9:30 a.m. "Developing and Using Instructional Material"
"Sources of Teaching Aids"
Lewis V. Peterson, Director, Visual Education Service University of Illinois, Champaign

10:45 a.m. RECESS

"Selection and Use of Teaching Materials"
Fred W. Swan, Coordinator, Evanston, Illinois, High School

12:15 p.m. LUNCH

1:30 p.m. to 4:30 p.m. Workshops and Leaders
"Conference Leading"
E. S. Baird
E. M. Claude
M. C. Wheeler
"Human Relations"
D. W. Aiken
H. F. Hinton
L. L. Wingo

4:30 p.m. "Special Conference of State T. and I. Personnel, and State R.E.A. Personnel"
W. A. Ross and Frank H. LaMaster, Co-chairmen

7:00 p.m. BANQUET - Abraham Lincoln Hotel

OCTOBER 27, FRIDAY
(Ballroom, 4th floor)
Chairman, H. C. Potthast

9:00 a.m. "Question Box"

10:00 a.m. "The Value of State Job Training and Safety Advisory Committee"-a panel discussion
H. F. Hinton, Florida State Supervisor T. and I. Education
D. B. Bidle, R.E.A. Safety and Job Training Advisor
L. Lloyd McCaskey, Manager, Oakdale, Wisconsin
Albert Hinrichs, Menard Electric Cooperative, Illinois
W. L. DeVaughan, North Carolina R. E. Instructor

11:00 a.m.	"First Aid" Dr. Carl J. Potthoff, National Director of First Aid and Associate Medical Director, American National Red Cross, Washington, D. C.
11:30 a.m.	"Human Factors in Accidents" H. G. Pruett, Chattanooga Power Board, Tennessee
12:15 p.m.	LUNCH
1:30 p.m.	BUSINESS MEETING - Ballroom, 4th floor "Summary of Conference" Chester H. High, Ohio R. E. Instructor

INTRODUCTION

The Eighth Annual National Rural Electrification Job Training and Safety Conference was arranged by the 1950 Program Planning Committee, with the assistance of representatives from the Vocational Division of the U. S. Office of Education, the Management Division of the Rural Electrification Administration, together with representatives from various states.

In preparing this report, the committee responsible found it impossible to include full information on every program item. This was especially true of the panel and group discussions, and the workshop sessions. However, everyone who attended has his own personal notes with which to supplement the "high lights" appearing in this report.

Special acknowledgement is hereby made to the following workshop leaders and instructors:

D. W. Akin, H. F. Hinton, E. S. Baird, E. M. Claude and M. C. Wheeler.

Special acknowledgement is also made to the instructors who provided for display and discussion purposes the splendid teaching aids representing a variety of approaches to instructional problems in electricity.

Much of the success of the 1950 conference was due to the untiring efforts and close cooperation provided through the Association of Illinois. Cooperatives, the Illinois State Vocational Education Office and the Illinois Job Training and Safety Committee. Special thanks are due Abe Becker, E. M. Claude, L. L. Wingo, A. C. Barnes and their assistants.

A further evidence of Illinois interest and support in connection with this Conference was shown in the personal appearance of Governor Adlai Stevenson, Mayor Henry Erlison and N.R.E.C.A. Director Harold E. Whitman.

H. C. Potthast, Chairman
1950 Program Planning Committee

ADDRESS BY GOVERNOR ADLAI STEVENSON

I am here this morning to extend to your conference our cordial welcome. I may be slightly prejudiced, but the Mayor and I think it eminently proper that you should be meeting here in Illinois where the development of rural electrification has enjoyed such success and where it has contributed so greatly to our farm economy.

To be quite honest, I am not sure I understand just what rural electric instructors are. But I am told you are technical experts who help train the people who build, maintain and operate our rural electric lines. As such, you are helping to bring more and better electric service to the farms of Illinois and the nation, and that is a good thing. I am also told that one of the main objectives of your meeting this year is to stress safety factors in your work. I know that is a good thing because the more people we have talking and thinking about safety the better off we are going to be, whether it be safety on the farm, in the home, in the factory or on the highway.

We all know the tremendous cost of accidents in terms of lives, limbs and money. We read every day of accidents in the papers and we see the monthly and yearly recapitulations on accidents in this or that category; we note the figures or the number of dead and injured and we are duly shocked. But with too many that is as far as it goes. There is too much fatalism about accidents in the minds of many people, too much cynicism about safety and safety campaigns.

But I think safety campaigns can serve a useful purpose if intelligently planned and conducted. They serve a good purpose even though they do not also reflect immediate or spectacular results in the accident tables. Accident totals fluctuate, but over the long haul the safest industries, the cities and the states are those which have developed to the highest degree safety consciousness among the people and have achieved the best enforcement of safety laws.

In Illinois right now we are trying to create just that sort of consciousness. We have in operation a good highway safety program and we are engaged at the present time in tightening up traffic law enforcement through the state police and local law enforcement officers. If anyone in Illinois questions the need for this, I would direct attention to the latest report issued just last Friday by our State Division of Highways. It shows that in Illinois cities over 5000 population, there were 20 per cent mor traffic accidents and 15 per cent more injuries in those accidents during the first half of 1950 than in the comparable period a year ago. And of course the traffic safety problem grows more acute and complex all the time as traffic increases and as our old highways wear out and become more dangerous.

Just as it is in your particular field, safety is a continuing educational process. We cannot stress safety one week and forget about it the rest of the year. We must work at it all year 'round. For that reason we have organized a similar statewide industrial safety campaign designed to cut industrial accidents in half by 1952. I don't know

whether we will be able to do that or not but I know we can do it if enough people can be made to realize that the campaign is something that affects them personally. It affects not only the workers in the plants but the consumers who have to pay in higher prices the cost of industrial accidents.

I am happy to say that we have had encouraging cooperation from industry all down the line. Industry knows from experience the importance of safety. It knows the dollars and cents inportance, to say nothing of the humanitarian considerations.

So I wish you well in this meeting and in your long range approach to the problems of safety in furnishing electricity to the farms. I think every one of you must feel a deep sense of pride in being identified in a constructive way with rural electrification. It is almost impossible to exaggerate the advantages that have come to the farm families of Illinois and the nation through the tremendous expansion of electric lines in our rural areas during the last 25 or 30 years.

In 1920, only about 2300 farms in all of Illinois had electricity. That was roughly one per cent of the farm homes in this state. Today, I am told by Mr. Becker that 93 per cent of our farms are electrified, that the 27 rural electric cooperatives alone serve about 118,000 farms and that the private utilities bring power to almost as many. Manager Becker also tells me that of $57,000,000 which the Illinois cooperatives have borrowed from the Federal Government through the REA, $11,500,000 has been repaid so far. Here is an example of a governmental program that's not only good for the people but is good business! Rural Electrification is paying for itself. And I can remember when some people of very little vision and very strong partisanship were attacking REA as just another government boondoggle.

We are proud of Illinois' record in rural electrification. We are proud that the first personnel training program for rural electric cooperatives was begun here. And we are proud of the fine safety record that you have compiled, a record which confirms the point I have sought to emphasize that the development of a safety consciousness is an educational process which pays long-term dividends.

What you are doing is, I think, only a part of a broader task that is vital to the future of America. You are helping to make farm life more attractive. You are helping to equalize the opportunites for better, happier living in rural areas. The marked shift in population from the rural to the urban areas that has been taking place in the last two decades is not a healthy trand. There are almost five million fewer farm families today than in 1910; fewer people live on the farms of America today than in 1880.

Farm life in this age can and should be as attractive as urban life. We need to keep on working in that direction, we need to give more thought to the amenities of life on the farm. We need to provide the better schools, the better roads, the facilities for modern living which will encourage more young people to pursue agriculture as a career and thus maintain the family farm as the foundation stone of American

agriculture.

The things we are doing in these directions all add up to a sound investment in the stability of our agriculture and the happiness of our farm people. The two go hand in hand. They are goals toward which we all need to direct our energies through private initiative, through government, and through every channel. I believe that we are alert to the challenge and that we will be able to meet it.

TRENDS IN R. E. A.

by

I. Thomas McKillop

The question posed for my part in this program asks - what are the trends in REA?

This, I must confess, is a subject much to my liking because it requires a rather searching analysis of what REA is doing and where the Agency is going. It requires not only a report of the facts but an interpretation of those facts. All of these things have meaning and a direct connection with the activities of those of you who are here for the National Job Training and Safety Conference.

From its inception, the REA loan program has been dynamic. REA has always had a certain pride in being referred to as an "action agency". By this it is meant that REA carries on an active program of loans and of technical aid to its borrowers. Such a program is necessarily a complex and ever changing one. Not only is rural electrification in a state of transition but the same of REA itself.

The first of the four major trends in REA has to do with the comparitively new rural telephone loan program. Here is another field of rural need where the REA pattern is being applied. The Congress, after much deliveration, assigned REA the task of doing the same thing in the rural telephone field as was done in the field of rural electrification. Where rural electrification is already beyond the three quarters stage, rural telephone extension and improvement is only at its beginning. Other than the facts that both these services require the use of poles and wire, there is not too much relationship between them. Electricity has a multitude of uses; the telephone's role is limited to voice conversations. However, just as the rural electrification program opened up new enterprises, now jobs and new demands for goods, the rural telephone program may be expected to do the same thing.

Only some 40 per cent of America's farms now have telephones in service; in about half of them the existing service is not satisfactory. To remedy these conditions is going to require a planned loan program over a span of years. A lot of men are going to climb a lot of poles to string thousands of miles of wire before rural America has modern communication facilities. I think all of you are well aware of the fact that the training and background we have developed in rural electrification will have its application as the safety and job training principles are applied to this new field of work.

To give you an idea of what is happening in the rural telephone field as of October 11, REA has received 584 applications for loans to modernize and improve rural telephone service. Of these loan applications 35 have been approved and $8,019,500 allocated to the borrowers. The first REA-financed telephone facilities are already in service; you may have heard or read about the President's chat with a farmer and his wife over the first REA-financed phone.

REA's new assignment in no way interferes with or substitues for the rural electrification program. It only means that we have had to devise new administrative policies and procedures to carry the increased load. Only a minimum of new personnel, mostly highly trained telephone specialists, have been added to the agency's working force. As the years progress, however, we may well expect that the telephone program will assume an even greater importance in REA operations.

While rural telephony is still an infant, rural electrification is approaching maturity. This is true among so many REA borrowers as to identify a second major trend in REA.

This second trend is the gradual massive shift of rural electrification borrowers from the construction to the operations stage. In 1935 when REA was established, only about ten per cent of the farms in the United States had central station electric service. Today that figure has increased to 86. Some 3½ million farms and other rural consumers are served by REA-financed systems.

It does not require any expert examination to see that up until recently the large majority of REA co-ops have been fully engaged in construction activities; in rapidly extending service to the farms in their system areas. Now, after 15 years, over a million miles of line have been energized. In state after state, the percentage of rural electrification is within 10 points of completion. We know that this job of building new service drops will never be fully completed so long as new establishments keep springing up in the country, but we are also well aware that the phase where construction is the keynote is now a matter of history.

Instead of construction, operations and maintenance of the existing plant keynote the approach of co-op management. In a good many instances this transition has found the rural electric system unprepared to cope with new and different problems. Too many systems have had a one-sided development. When the accent was on construction, there was enthusiasm and excitement in meeting rural needs. The pace of action was high and the applause was great. Suddenly, the pace has slowed. Now the emphasis must be placed more on business organization and good management practices.

These, while necessary, are not the dramatic challenges posed by construction. In many cases the borrower's business organization actually suffered from neglect while the construction period was under way. Planning, execution and checking on execution are the routines typical of enterprises in the more adult stage of growth. The little problems, neglected and disregarded, in the earlier stages now arise as bigger problems to plague and harass management. Having built our plant and got it going; we now have the obligation to operate and maintain it. When the lines are new, co-op members are happy to have any kind of electricity. But that stage does not last long. Shortly they are demanding that their electrical service measure up to the best provided anywhere - and they are right in making these demands. When the construction stage is ended, the co-op is actually just getting started. That's where most REA co-ops are today. They are just beginning to have to face up to the problems which are inherent in the operation of a rural electrical system.

Co-op managers and board directors are finding that they have a larger problem on their hands than they expected. Operating changes are necessary in many instances to readjust personnel and improve operating policies.

These actions are the expected pattern of behavior of any business enterprise when it leaves behind one stage of action and enters another. The experience gained in one stage of existence is not always applicable to what is happening this year and what is going to happen next year. The increase in the number of management problems stems from this change. It is also evident in an increasing number of instances where the member-management relationship was never fully developed.

As we trace the origins of co-op problems, we are more than ever convinced that the seeds of neglect planted in the early life of a co-op are sure to grow up into full grown problem weeds at a later date. Never were the requirements for top rate co-op management so urgent as they are at the present, and until our borrowers attain more management maturity, these conditions may be expected to prevail and to increase.

Of no less importance than the requirement for good management of co-op operations is the need for system maintenance. Every item in our plant has a predictable life. We know on the day we install it how long it may be expected to last. But it will not last as long as we have a right to expect unless we take good care of it, on a planned basis of servicing and regular inspection.

Machines as well as men have their job descriptions. We are expected to use the machine in the way it was intended and to give it the care and maintenance it requires. Unless our maintenance program is planned and charted, we will have machines with only a half-life and equipment breaking down at the most embarrassing moment.

This new stage in the development of rural electrification has a great deal of significance for you. Good management recognizes the urgency of the proper training for co-op personnel as well as it recognizes the urgency of safe working conditions. In some instances, co-op management still preoccupied with its transition problems has not yet been fully educated to these needs. There is a great opportunity for all of you in seeing that these needs are effectively presented. They need to be spelled out in the terms of service as well as in the terms of dollars and cents.

Out of REA's change from the construction emphasis to the operations emphasis has grown a third major trend. And that is this; the longer rural people have electricity, the more use they make of it. We now have a situation where more farm people are using power for more purposes than ever before. Their use of power is increasing faster and to higher levels than anyone dared to predict. And we cannot guess where and when this skyrocketing will end.

This poses an increasingly important question for rural electric systems, where are they going to get the power to satisfy the rural demand?

REA's records show just how pressing this problem is becoming. Three different figures tell the story. First, in the fiscal year 1940 REA-

financed systems needed a little less than a half billion kilowatt hours of electrical energy to supply their rural members. By fiscal 1945 they needed only a little more than two billion kilowatt hours. But in the fiscal year of 1950, REA-financed systems purchased or generated a little more than eight billion kilowatt hours. These figures reflect, of course, a very great increase in total number of consumers, discussed below.

Second, on all REA-financed lines in the period between December of 1946 and December 1949, the individual farm consumers increased their average monthly use of power from 101 kilowatt hours to 141 kilowatt hours. This second significant figure does not have full meaning until it is examined in relation to third and last.

Third and most important of all is that between December of 1944 and June of 1950, REA-financed systems connected about two million one hundred thousand new rural consumers. This sensational expansion of rural systems in a little more than five years has created a situation where of the slightly more than three million consumers on REA-financed systems, about two-thirds of them are comparatively new users of electricity. This, more than anything else, dramatizes the urgent need for adequate and reliable sources of power.

Anyone who has given any attention to the normal trends of rural power use knows that two-thirds of the consumers on REA systems are as of now only beginning to get past the minimum-bill stage in their use of electricity. Recent studies emphasize this fact. For example, an analysis of power use was made of 1300 rural consumers who had been connected to REA-financed lines in ten states for ten years or more. In 1938, their average monthly consumption of electricity was about 54 kilowatt hours a month. In 1948 the same group of farm people used an average of 254 kilowatt hours a month, an increase of five times in ten years.

The large number of comparitively new users of electricity is what makes the most recent average individual monthly consumption figure deceptive. It pulls that figure down to the point where it no longer represents the extensive use of electricity by rural consumers who have been connected long enough to get acquainted with electricity's potentialities. In the not too distant future, we may expect this situation to correct itself.

It seems safe to predict that in the very near future we will start getting the full impact of these more recently connected consumers. As their demand grows we may expect more and more of a strain on our rural electric systems. By the dozens, then by the hundreds, these systems will be facing two important problems, first, where to get adequate and reliable power and second, how to readjust the present system to meet the increased load.

While it is true that rural electrification has reached the 85 per cent mark in connecting rural consumers, it is also true that a new stage of rural electrification is near at hand and it promises to be a most active one for many years to come.

It is only right that this should be so. Certainly it was never intended that we should exert our efforts to get electricity to the farmer then drop the job without assuring him adequate and reliable power to meet all his needs. To do so would be to endanger seriously our two billion dollar investment.

Out of the transition of rural electrifcation systems from construction to operation and maintenance and out of the present and coming increased rural demand for power has emerged a fourth major trend. It is the development and refinement of cooperative management principles and practices. This development has been slow, but it is the natural outgrowth of system maturity.

The problems of a rural electric co-op in general follow the pattern of problems of any other utility enterprise. We have found, however, by hard experience, that the solution to these problems must follow the cooperative approach. In almost every instance they cannot be solved by profit enterprise approaches and practices. In virtually every REA-financed co-op there comes a time when this fact must be recognized.

Recently, in an address before the American Institute of Cooperation, REA's Administrator, Claude R. Wickard gave this definition of a cooperative. It is important because it shows us what is required in successful cooperative management. Here is what Mr. Wickard said "A true cooperative adheres to the principle of open membership and thus gives everyone an opportunity to benefit by its activities. A true cooperative has no other motive or objective but to serve its members well. It does not discriminate against one group or class of people as against another in the area. True cooperatives are democratically controlled. Every member has an equal right to vote and to be heard. To be successful, a cooperative must have wholehearted member support and must serve the people economically and efficiently".

It is not a question as to whether a profit enterprise is better than a cooperative enterprise. It is simply a question of what purpose the enterprise is intended to serve. Rural people by tradition put their faith in home ownership and home management of their enterprises. The cooperative, as a non-profit, locally owned and locally managed operation meets their requirements.

The complexities of operation and management of a rural electric cooperative demand a certain amount of training and assistance before the local owners and managers have a reasonable assurance of success. REA does its best to supply such assistance.

To make this effective in the management field has required the development of new techniques and the refinement of old techniques both tailored exactly to cooperative management needs. Once you lost sight of the best-possible-service-for-all goal and substitute the profit-for-a-few viewpoint, your rural electric cooperative gets deeper and deeper in trouble.

Developing the understanding that the cooperative approach must be used to solve co-op problems is one of the most difficult assignments in the field of management assistance. I am happy to say that more and more progress is being made in developing this understanding and that where this understanding is present, more and more rural electric co-ops are becoming fully self-sufficient as we want them to be.

Good cooperative management is closely related to your objectives in the field of job training and safety. Good service to all in the co-op membership requires that management meet its obligation to see that each person who works for the co-op be fully equipped to do his work and that he be given a planned program of bettering himself in the

assignment so that he may assume greater responsibilities as time goes on.

At the same time good co-op management clearly recognizes the benefits which come as a result of all personnel being trained in accepted safety practices; in following these practices and in management providing safe working conditions.

The jobs in rural electric co-ops spell opportunity for thousands. They are jobs which would never have existed without the widespread developments of the rural electrification movement and the successful operation of REA-financed co-ops. The conditions under which people work these jobs may mean the difference between life and death. Co-op management, faithful to its ideal of service, necessarily must be even more conscious of the importance of job training and safety than any other type of enterprise.

The trends in REA as an agency and the trends in rural electrification are inescapably intertwined with the things you are doing today and the things you are planning to do tomorrow. As you plan for the future you will want to consider these trends . . (1) the newly developing rural telephone program (2) the transition of rural electric co-ops from the construction to the operations and maintenance stage (3) the present and expected future rural demand for power and (4) the development and refinement of management techniques which are uniquely cooperative in character.

REMARKS BY W. A. ROSS

In the years in which members of this group have met in the Nation's Capital, you have been greeted directly by Dr. R. W. Gregory and Mr. W. H. Cooper of the Division of Vocational Education, U. S. Office of Education.

This year it becomes my privilege to extend for these two gentlemen their best wishes for the success of the 1950 National Rural Electrification Job Training and Safety Conference, and to express regret that neither of them can be with you for this interesting and instructive week. I am commissioned to say that vocational education's interest in Rural Electrification training, through Trade and Industrial Education channels, continues as it has in the past, and that with you we look to the future development of electrification for the benefit of rural people with faith and confidence.

On a beautiful clear day, not long ago, I was riding along a fine paved highway in my native State. It leads directly past the quarter section of land homesteaded by my grandfather shortly before the Civil War. This land corners up to old Fort Vasquez, one of the chain of forts built in the 1830's by the Rocky Mountain Fur Company. Two miles west is the 160 acquired by my father and held by him for over 50 years. Two miles north is the little town where we did our trading, and six miles north is the homestead of the other grandfather.

But, lover of history that I am, it was impossible on that day for me to keep my mind entirely on people and events of the past. A few miles back we visited the manager of an R.E.A. co-op and observed the State instructor giving on-the-job training to a line crew. R.E.A. progress was in evidence, and it commanded my attention. Man's servant, electricity, was being put to work doing dozens of back-breaking farm jobs, and easing the load of the womanfolk in the house.

Again my thoughts turned to history - to the Plans Indians who had roamed that area; to the explorer; the trapper, the trader, the frontiersman, and to the settler. Suppose Louis Vasquez should return some night and find his Fort dotted with electric light bulbs instead of a few guttering candles. Suppose the early settler should return to find his cabin miraculously lit by the Genie electricity. I wonder what grandpa might have said, in his amazement, if the lantern in his hand had suddenly become a strong electric torch, or the hand feed grinder whirred out of his hand due to suddenly acquired electro-force. I there added to this speculation grandma with an electric toaster and dishwasher, and the children provided with radio and television sets. That would have been confusion confounded, and I'm sure that red-skinned Cheyennes and Aparahoes would have attributed it all to evil spirits - no less.

Our forefathers accomplished many wonderful things - the impossible in many instances - with but brawn and faith and indominable will at their disposal. They did not miss the advantages of electricity because they were unaware of its existence, its uses and possibilities. They faltered not because the road was long and rough, and they wrested a living from the soil in spite of hardships and difficulties. What more might they have accomplished with only a few of our taken-for-granted modern "allies" of good living including electricity.

It is significant that fewer than 18% of Americans now live on farms, as compared to 23% in 1940. It is still more significant, however, that 7 out of 8 farms today, through the efforts and accomplishments of R.E.A., have electricity for light and power. Anyone truly interested in humanity will take pride in, and rejoice over these improved living and working conditions. The ultimate success of this program, however, will not be measured in miles of lines built, in kilowatt hour consumption, or the number of plugged-in appliances used. It will be measured, however, in the improvement reflected in the people who are privileged to have such advantages.

We may well take stock of what the pioneer people accomplished in terms of what they had to work with. Shall we attempt to compare their moral fiber to that of present day people? We of the present-day world may well be expected to accomplish far more, to give a great deal in service to mankind, and to show a real growth in mind and spirit because greater advantages are ours. A house and a home are two different things. Wiring for light and power improves the house, cuts work time, and makes more leisure time available. A wired house is not necessarily a home, but it should help to make it a better place in which to live. The home depends on the people who live in the house. What we do with our time, is an individual matter, but it is one important measure, nevertheless, in the real value of electricity to rural America, because in the final analysis the two basic resources are the land and the people.

Among other things it takes wiring to get electricity to the consumer; and with apologies to Edgar Guest, I should like to have you share with me W. C. Richardson's poem titled "It Takes a Heap of Wiring"

It takes a heap of lightin' in a house to make
it home,
So there ain't too many shadows and you never
have to roam
Through a dim and musty cellar, trippin over hose
and spade,
To a corner conserve cupboard for the jam that
Mother made.
You forget about the rafter till it bangs you on
the dome;
Oh, it takes a heap of lightin' in a house to
make it home.

Oh, it takes a heap o' wirin' for the kitchen
gadgets, too,
When Mother's in a hurry and the plugs are all
too few.
The coffee's gettin' colder while the toast is
bein' charred;
When she's warmin' up the coffee, then the toast
is gettin' hard.
While Mother's in the kitchen and Father's in
a foam,
Oh, it takes a heap o' wirin' in a house to make
it home.

Oh, it takes a heap o' outlets in the livin' room and hall
For the radio and vacuum and the table lamps and all
The other modern fixtures that no livin' room should slight,
For a room that's built for comfort should be cheerful, neat and bright.
Now a dim and greasy igloo may be just the thing in Nome,
But it takes a heap o' lightin' in a house to make it home.

There's just one time in life when the lightin' may be dim -
When the livin' room is cozy and there's only her and him.
And when the folks are in the driveway and he's reaching for his hat
And she's wipin' off the lipstick--but I'm much too old for that.
Though I always will remember when foot-loose I used to roam
That it took a heap o' lovin' in a house to make it home.

But those days are gone forever, and today I'd like to see
A playroom in the basement and a workshop just for me;
Home movies in the parlor, yes, and tele-vision, too
All sorts of kitchen gadgets and everything that's new;
And the house completely wired from cellar up to dome -
Today it takes a heap o' lightin' in a house to make it home.

In this week of Conference, let us also look beyond the basics of electricity--the mere steps in a job--and give some thought to its effect on the people served. Will they be better farmers, better stockmen, better citizens, better Americans that they would have been otherwise? What is our real contribution in bringing this about? Think it over.

REMARKS BY A. C. BARNES

On behalf of the Illinois Job Training and Safety Committee and the twenty seven Cooperatives in Illinois, it is my great pleasure to welcome you to this Conference.

We were very happy to learn following your Conference of last year that you had accepted our invitation to come to Illinois. It was in Illinois that this program had its beginning because the first job training and safety committee in the United States was organized on May 20th, 1941 at Petersburg, Illinois. From this small beginning has developed one of the most successful programs of the Rural Electrification Administration.

It is the desire of the Illinois Committee, the managers, Line foremen in this Sate to help make this conference your most outstanding. We hope that you will have a most profitable and enjoyable time. We hope that you will visit and become better acquainted with Illinois and its many noted shrines.

Our Committee is here to assist you during this meeting in any manner.

SOME PRACTICAL VALUES IN RURAL ELECTRIFICATION TRAINING
By A. E. Becker

In talking on the subject "Some Practical Values in Rural Electrification Training", I will need to apply my remarks to our experiences here in Illinois and the results we have obtained through the activities and programs of our Illinois Job Training and Safety Committee.

The first thing that comes to our minds in discussing this subject is the actual dollar savings each cooperative earns that participates in this type of a program. However, there are many intangible values to be obtained in this program that are beneficial to the cooperatives, which in my opinion by far exceed all of the dollars the cooperatives save in their reduced cost Compensation Insurance.

Let us take a quick review of the dollar savings our twenty-seven cooperatives in Illinois have earned by supporting and participating in this kind of a program. In 1943 all of the cooperatives in Illinois were paying a Compensation Insurance rate of $3.84 per HUNDRED DOLLAR PAYROLL on their outside men. In 1919-50 the Compensation Insurance rate dropped to $2.72 PER HUNDRED OF PAYROLL on the same classification. When you take into consideration that we now have 761 linemen and groundmen working for the twenty-seven cooperatives in Illinois, you can readily see the tremendous financial savings that has been made in our State as a result of our Job Training and Safety Program. In addition to the above mentioned savings we have one insurance company operating in our State which gave refunds amounting to 47.7% for 1948 and 40.7% for 1949 to the cooperatives they cover. Their only reason for making these substantial refunds was the safety record that our cooperatives have maintained. This good safety record is the natural results of our Job Training and Safety Program. I need not add that our Illinois Job Training and Safety Committee feels that it now cost 9¢ per employee to operate this program in our State. Of this amount our cooperatives pay 4½ and the Department of Vocational Education pays 4½. Since the mileage of our cooperative's lines has been increased during the last few years we have been able to reduce the assessments of our cooperatives in Illinois 25% and still maintain a good program with two safety instructors in the field. However, I do not believe that we ever want to get ourselves in the position where we can furnish this kind of a program to our cooperatives free. It is the investment or the financial interest our cooperatives have in this program that creates their interest and active participation. In my opinion this is the principal reason that has made this program so successful in it's operation. Here I can't resist reminding you that I will always be very proud of having the opportunity of serving on the first Job Training and Safety Committee organized in Illinois and the United States.

To go on to some of the intangible values a cooperative can obtain which to my mind are practical, our program in Illinois has developed uniform practices in some phases of our work that has brought many benefits to our cooperatives. I am thinking of the unloading of poles procedure which has been adopted by all of our cooperatives. There is also the procedure of hanging transformers which is now being uniformally used. There are many others that I could enumerate that have been developed since 1941 that have been accepted and are being used by our 27 cooperatives.

The adoption of uniform methods in many phases of our outside work has brought about fine results over the past three years here in Illinois. As you know we are in a heavy loading area and have experienced heavy ice storms over large sections of our state during the last three years. Our cooperatives who were in trouble were greatly assisted by adjoining cooperatives sending in trucks and crews to get service restored. I know from personal experience while manager at Menard Electric Cooperative that these crews from adjoining cooperatives carried on their part of the work and worked in with our crews as a unit due to the uniform methods that are being used over the state almost without exception.

Our Job Training and Safety Program provides inducement to the beginner and trainee for advancement in his job. It allows him to benefit from the discussions as well as offers him the opportunity of entering and taking part in the discussion. In this way the beginner obtains the benefit of the older mens experiences. Our training program as operated in Illinois allows the Foremen and Supervisors to observe the trainee in conference. It also gives the Foreman a chance for picking up many original ideas which are presented in these conferences and sometimes these original ideas come from the beginners. Our training program teaches the trainee what to expect from his immediate supervisors and these instructions apply to everyone and goes all the way up the lines. Without bragging, feel that our Illinois Job Training and Safety Program has materially assisted in creating well trained, efficient employees for our cooperatives. These well trained employees are more practical in the care of equipment, have less days off the job caused by accident and are more loyal and dependable. I believe that one of the largest intangible benefits that our cooperatives have obtained through our job training are the well trained crews which are developed and who understand what authorized procedures are and as a consequence can carry out their jobs more efficiently.

Our Training Program creates a sense of security in an employee which I believe in turn creates better team work on the job. A good example of this team work was the emphasis which was placed on intensive and unit training by all of our Armed Services during this last war. No man would want to volunteer to go into combat with a green untrained unit. I think the same sense of security in an employee working in a gang of trained men as a unit applies to our own cooperatives in creating better team work.

On of the most important results of our Training Program has been one to change our thinking in what it will do for us. We have come to realize that the quality of service that we can expect to receive from an employee will be in ration to the amount of training and safety practices he has acquired. This sample rule should apply to the employer, the cooperatives to its members, in that the quality of service it gives to it members should progress in ration to the construction program. As more and more lines are built and energized it becomes the responsibility of that cooperative to give better dependable service to its members. I believe that one of the results of our training program has given all of us a new slant on the important and far reaching effects safety and job training is having on the whole Rural Electrification Program. It seems to me that it can be summed up in on sentence "The Modern Way To Do A Job Correctly, Is The Safe Way To Do A Job."

It is only natural that we in Illinois believe that the procedure under which we operate our Job Training and Safety Program is the most practical. In making this statement I wish to stress the fact that we have full representation on our Job Training and Safety Committee, three directors, three managers and three line foremen. The managers and line foremen are elected each year by the employees of the cooperatives and directors are selected from our State Association Board. We hold regular meetings with representatives of the Department of Vocation Education and set up the policy and advise the State Board of Vocational Education on the type of a training program our committee believes to be best suited for our needs. I am sure that you will agree that the success of the operations of our Job Training and Safety Program in Illinois has proven successful under this procedure.

In summing up some of the practical values we have secured from our Job Training and Safety Program, I would say that the results speak for themselves. We have achieved a large financial saving for our 27 cooperatives and at the same time we have helped produce efficient, trained employees who are giving high quality, dependable service to the cooperatives and farm families they are serving.

INDIANA SAFETY DEMONSTRATION

Those participating were Ed Kellogg, Indiana Safety Instructor, C. O. Stamper, Manager of the Hendricks County REMC, Harold Anders, Foreman, Owen S. Stamper, Lineman, Elvin Gibbs, Lineman, Arli Couch, Lineman, Lester Hane, Lineman.

The purpose of the demonstration, as originally presented at the Annual Meeting of Indiana Statewide REC, was to acquaint the directors with the program along with the work the men are called on to do and the importance of proper tools and methods of doing the job. The skit was also presented at the Hendricks County REMC and the Newton County REMC annual meetings.

Mr. A. E. Becker, general manager of the Association of Illinois Electric Cooperatives, and Mr. John TePoorten, coordinator of schools for vocational education for adult education in Wisconsin, saw the skit in Indianapolis and suggested that it be presented at the annual REA conference. Accordingly, Indiana Statewide agreed to underwrite the expense and Hendricks County REMC agreed to participate. The skit itself had stage properties consisting of mainly; two spans of wire on three eleven foot poles erected, the crew were in uniforms furnished by the cooperative and had hot sticks, protective grounds, linemen's personal tools, rubber gloves, flags, signs, and first aid kits.

The first part consisted of demonstrating the proper way to kill and ground a line and change out a broken insulator.

The second part changed the method and pointed out the hazards of not grounding by burning the lineman attempting to change the insulator on an energized line that he thought had been killed. This part pointed out the importance of not taking for granted what somebody else had done and not attempting to do the job according to time but rather double checking on the procedures.

The third part showed artificial respiration and first aid in taking care of the victim. The victim was taken from the pole, laid on the ground and artificial respiration started. He was revived but in the meantime his wounds had been treated with bandages and he had been covered with a blanket to prevent shock as much as possible. The ambulance was called over the co-op radio system and the patient was sent to the hospital as the skit ended.

This was the fourth time that the skit had been presented to an audience. Mr. C. O. Stamper played an important part in doing the sound work that was necessary in coordinating and getting the skit into shape to be presented.

FIRST AID BY DR. C. J. POTTHOFF

Saving lives is your business as safety engineers. Few, if any, jobs give more gratification when the work is well done; few should call for more re-evaluation of method when the over-all-results are bad. The teaching of first aid can always be regarded as a measure that will develop safety-mindedness effectively and will result in a reduction in accidents. In addition, this education results in better care for the injured. When we teach first aid we should always attempt to exploit to the utmost the safety-fostering possibilities of the course. In a recent study in one area of the Forestry Service, the training of supervisors in first aid resulted in a progressive reduction in the accident rate among employees. Over a period of three years the rate fell from about 21 to less than 6. Although other safety measures were used, the supervisors attribute much of the good result to the effects of first aid education.

There is a tendency among teachers, no matter what the subject to devote major attention to presenting facts. Of course it is important that students do gain information. But the instructor should always think of himself as a builder of attitudes and of improved behavior, as well as a dispenser of information. Certainly in the field of safety attitude is extremely important. We have some employees who appear to be utterly indifferent about anything we say about safety. Sometimes they seem even to resent safety education. The problem of changing this attitude calls for much more artistry in teaching than does the presentation of facts. We must first secure the acceptance of ourselves as teachers. If the student respects the teacher, has confidence in him, sees the teaching as something of interest, a major hurdle to developing safety-mindedness has been attained. The next step is to build gradually in the student's mind the import, the full meaning of the accident hazard as it relates to the student himself and his family. This need not be done by an appeal to fear; it need not be done directly always, but rather by casual comments occasionally, by introducing specific examples of the results of accidents and by attention to the fact that hazard is always with us.

In connection with the building of attitudes, I believe that one point we have overlooked is proper education to the fact that though we constantly escape accidents day by day, we must yet be alert always because one accident in a lifetime may have devastating effect. Inasmuch as we escape accidents so often, we can readily become complacent, indifferent, or reckless. The only sound course to pursue against this tendency is to hold ourselves always to safe procedures, to imbed deeply the habits of safety. We need to watch the environment, correcting hazards, to watch and re-examine the procedures we do so that accidents are less likely to occur. There are many ways to build attitude; you have learned about them at this Conference. The point should be clear that attitudes are not taught directly so well as they are taught indirectly through inference, through a careful build-up process. You may be able to teach a fact in less than a minute, but the building of a proper attitude in matters of safe living should be regarded as long-range teaching project, a project in which your full fruits are not development within the first minute, nor the first day, nor the first week.

So far as the teaching of first aid is concerned, it has seemed to me that one topic is rather often inadequately handled, namely the topic of examination of the victim. Perhaps we are not realistic about the practical

situation that the first aider faces - such matters as the factors that interfere with a careful examination, the problem of unclothing the victim in order to examine, and the fact that often one cannot be sure about the nature of an injury. It should be understood that the first aider needs only to know what body parts may be injured. Then he handles those parts carefully, manipulating as little as possible, splinting when indicated. In most field situations we cannot unclothe a victim completely. Likewise, we cannot ascertain for sure about the nature of injuries through field examination. Our objective again is to find where injuries may be located and of course if possible to get sufficient idea about the injuries so that we can give proper first aid. Accordingly, in a large share of cases the first aider gives care on the basis of merely suspecting an injury.

At this time we have the great problem of civil defense. REA safety workers and first aid instructors can make a great contribution to national welfare by volunteering their services as teachers, if they are so authorized, instructing in the local Red Cross chapter and in the civil defense organization. The injuries most likely to occur, if we were attacked, would be burns, cuts and bruises, and those other injuries resulting from the application of strong force. For radiation sickness, a more minor problem perhaps than many have been led to believe, there is no specific first aid measure. People who have sustained radiation injury should of course protect themselves against infection by excellent care of their wounds and burns and by following proper rules of good personal hygiene.

HUMAN FACTORS IN ACCIDENTS

BY

H. G. PRUETT

It has often been stated that 80% of the accidents caused by unsafe practices are due to human failure. With this in mind it would appear that a greater emphasis should be placed on what causes a worker to indulge in unsafe practices when it has been definitely proven that the manner in which he does the job is an unsafe procedure.

What is it that causes a worker to indulge in unsafe practices? Why should more emphasis be placed on determining how or where the cause originates.

During the past few years those engaged in the study of accident causes have established that the nature of man is sometimes controlled by certain human factors where abnormal mental or physical stresses are involved.

We have learned that the underlying causes of accidents due to human failure are many and a few of them may be classified as follows:

"1. Poor physical conditions.
2. Use of defective or improper tools.
3. Poor planning (worker or supervisor).
4. Carelessness.
5. Haste.
6. Forgetfulness.
7. Lack of job knowledge.
8. Thoughtlessness.
9. Inexperience.
10. Poor supervision.
11. Lack of judgement.
12. Uncooperative attitudes.
13. Outside worries.
14. Job pressure.
15. Disregard for safety.
16. Wrong or misplaced worker."

The first of these sixteen headings calls to mind a lineman of several years experience who developed arthritis but said nothing about it. He changed jobs to that of troubleman thinking he would not have so many poles to climb but he continued to suffer continuous pain in his hands and elbows. He later returned to his original job in the line crew on account of having to be exposed to the weather as a troubleman and then finally quit climbing altogether.

He told me about the trouble he had with his hands and arms and stated that at times while he was climbing poles or working on hot lines he experienced unusually sharp sudden pains that nearly caused him to fall two or three times so he decided to quit before he killed himself. He realized that some day that sharp pain would strike when he was not prepared for it. All too often a man in "poor physical condition" waits too long before he does anything about it.

The physical condition of a worker has much to do as to whether he will or will not work safely.

Any sharp piercing pain will cause anyone to favor the place where it hurts most. Rheumatism, hemorrhoids, tuberculosis, glandular unbalance and many other ailments where pain or irritation is present will cause a safe worker to develop unsafe practices and accidents can be expected to occur.

This also applies to a worker who has reached the age when he cannot do as much work as he could when he was younger and he resorts to short cuts.

Fatigue, whether physical or mental may cause accidents. Comparing the human brain to a telephone exchange it has been said that the human brain has five times as many telephone wires as there are people in the world, and consists of ten billion cells, each of them like a tiny battery with a wire running from it to carry the current. Regardless of whether we walk, run or read those telephone wires are humming with messages to and from the brain.

When the brain is tired, it gets its message muddled and it is difficult to hear or see correctly and muscular coordination is less acute. We drop things for no apparent reason, and cut out on poles. We stumble and fall and experience difficulty in remembering what we are told to do. Our mental batteries are run down and need recharging and the only way to recharge them is to sleep and rest.

In the light and power business we have to contend with many hazards; so many in fact that one who is not up to par or perfectly healthy not only jeapordizes his own life but those with whom he works and he is definitely an unsafe man.

During world war two, good linemen were scarce and men who quit climbing years before went back to pole work and many of them were employed regardless of their physical condition. One man in his 50's could not do the work of a first class lineman because he was sick with a chronic ailment. The foreman favored him considerably when the going was tough and during hot summer days he was permitted to sit in the shade. One morning this crew was engaged in replacing damaged insulators on an energized 44KV line mounted on 45 foot poles. Insulators had been changed on three poles and the fourth pole was being worked by this sick lineman and his buddy. Every precaution was taken for them to do a safe job. The hold off sticks were in place as groundmen took their position for holding one phase out and away from the string of bell insulators while the change was being made. Before any stress was made this lineman reached out his leather gloved hand and took hold of the "hold off" stick at a point less than 1½ inches from the head. There was the usual flash and he immediately became a blazing human torch. The current had jumped the gap between the head of the hold off stick and the knuckle of his hand, flashed across his body and down through his climber to a ground wire. He died at sundown. No one has ever been able to give a plausable reason as to why he took hold of the top of that stick instead of the bottom. He had placed the stick on the line and told his foreman he was ready - he did not slip or cut out - his buddy within just a few feet of him saw no reason for such an act and it was not considered that he was too high on the pole. The only conclusions that were reached were that he forgot and that he was a sick man.

Here was a situation where every known hazard was made as safe as possible but the hazard developed in the form of a human factor that we today have little control over and often fail to recognize, and is considered as one of the human factors that is responsible for 80% of the accidents that occur and charged to unsafe practices.

Human abilities is high on the list as causes for indulging in unsafe practices. All people are not equally endowed, musically, mechanically, in strength, intellegence and others. One man will readily understand while another, hearing the same instructions fails to learn what is to be done often overlooking a hazardous situation. When instructions are finally made clear he can do what he is told to do and will do it well but if he finds that he is being criticized for his failure to readily comprehend he will understand about half of what he hears and hopes by watching what others are doing he will do what the boss intended for him to do.

Some people are more intelligent than others and the more fortunate have the ability to apprehend the interrelationships of presented facts in such a way as to guide their actions toward a desired goal while the less fortunate person does not have this ability. For example a small line crew was to remove a tall pine tree that rested against a 2300 volt line in the middle of a span. The foreman explained how with the use of pike poles they would push the tree clear of the line and let it fall. I doubt that the foreman told them what to do to keep the tree from falling on any of them because they were pushing the tree away from them.

When the tree began to move along the line and was about to fall someone yelled "timber". Pikes were withdrawn and all the crew except one stepped back a few feet and watched the tree fall. This one crew member dropped his pike and ran directly in the path of the falling tree and was pinned to the ground by the tree trunk. His injuries consisted of a broken leg that resulted in 142 days lost time, a hospital and medical bill of $717.30 plus $366.00 workman compensation or a total of $1083.30 plus about $500.00 more, often referred to as hidden costs.

Referring again to the definition of the word intelligence namely "The ability to apprehend the interrelationships of presented facts in such a way as to guide action towards a desired goal." So many accidents have been charged to "unsafe practices" and we stop right there instead of attempting to learn what human factor was back of what causes a workman to perform the unsafe act. As a result of not knowing what human factor motivated that act, all too often a workman possessing a subnormal amount of intelligence is permitted to continue his unsafe acts till he kills or cripples himself and possibly others.

It is universally understood that series burning street light circuits are to be worked only while using rubber gloves and with a clearance protection. Entirely too many have been killed and are still being killed as the result of attempts to work these circuits without this protection. Two men were sent to repair a break in a street light circuit that was open at the street light fixture and all that was needed to make the repair was a wire connector and a pair of pliers. After getting clearance a man went up a truck mounted ladder without his safety belt, gloves, tools or the connector. He hooked his leg through the ladder, called for his buddy to throw him a connector and his pliers and when he took the ends of the wires in his bare hands there was a flash and he fell into the truck bed and died within an hour. The investigation revealed that this street light fixture was the last one of that circuit on this street. As he received his clearance he saw lights further down the street go out and he was under the impression that the circuit he was going to work on was cleared. As the result of an error in dispatching the lights he saw go out

were on another circuit, regardless of the fact that he knew the circuit he was going to work on was open and lights could not burn yet the circuit could be and in this instance was energized.

This accident was definitely caused by an unsafe practice. What was it that caused this man to work that circuit without the required protection? What was it that caused him to do something that to his knowledge had killed so many, doing the very same thing he was attempting to do and had failed. In discussing this fatality and its cause with the victims buddy he was asked this question, "Is it true that linemen work series burning street light circuits without rubber gloves when they think the line is dead?" Being a truthful man and with tears streaming down his face and with much physical exertion he fairly shouted, "Yes we all do, I do it and so do the rest of us. We only wear our gloves when the boss is there." After he was more composed he explained that it was so seldom that anything ever happened that they did as they pleased about the matter of wearing gloves. Why do they do it?

Case after case like this could be related to show that a certain group of men refuse to accept known facts that unusual conditions can occur when least expected and these unusual conditions have resulted in injury and death, while another group would not think of doing such a thing. These are they who have the ability to not only understand but recognize that many things could occur that would result to a disadvantage to them. The facts were presented and accepted in such a way that guides their action towards the desired goal.

Another human factor that has resulted in the execution of unsafe practices is that of "emotional disturbances" such as worry, anger, distraction, fear, hate and some of the better things, joy, happiness, pleasant expectations and others.

All of these have caused men to do things they would not do had they not been emotionally disturbed. Several years ago a substation operator was to have been married. The station tripped out sometime during the night and as this operator could not be raised by telephone someone was dispatched to the station and found him dead on top of an oil switch that had been energized before he climbed up there. There was no apparent reason for him to be there. Every operator should know, and it was believed that this one knew that this was a killer spot, but why did he do it? He and his bride to be were quite popular and there had been many parties. He had attended a party that evening before he came to work at 11 P.M. and he had lost considerable sleep.

Here is another fatality caused by an unsafe practice when the real cause was then an unknown human factor.

Anger is another human factor from which accidents develop and it is seldom necessary to be told when a man is angry because you can see it. He either gets white in the face or it gets red; his eye lids get more narror or wider; and his muscles tighten up so that he actually trembles. Often he crys and sputters instead of speaking understandably. He will grit his teeth and cuss a blue streak if he is the swearing type. When a man gets mad he is anything but a safe man and if I were working on a pole with him in that condition, the quicker I could get away from him the better it would suit me. I saw a mad lineman attempt to remove an old screw knob

from the pole. It just would not come out and it made him so mad he took his hammer and smashed it with one blow. He was in the wrong position and a piece of it struck and cut his knee just above the knee cap. Another piece struck his groundmans eye.

An angry lineman is a poor instructor for teaching the trade to an apprentice. Any employee who cannot control his angry emotions in my opinion should be replaced or given some other work and here are some of the reasons why. Regardless of who he is angry with he will seek revenge and all too frequent, accidents have occurred because the angry employee failed to warn or protect a fellow employee from a hazard when just a word of caution would have prevented the accident. If it is his supervisor that caused him to be angry it is possible that the work will lag or burn down accidentally. Part of the material that should have been placed on the truck before leaving the barn in the morning is missing because the angry lineman saw that the material was not placed on the truck. Anything that may embarrass the supervisor with his boss is the very thing the angry workman will be most interested in.

Another very important human factor that has injured so many employees is "worry" and who is it that has not had what might be considered an unsurmountable situation that seems to dig and gnaw at our very being till we did not know which way to turn.

I have in mind a professional man who is so much concerned about his sons future that he is nearly distracted. He is in a position to give the boy a fine education and the boy will not prepare for it; he will not even finish high school. This heavy burden is beginning to tell on this father and I would not be surprised to hear that he is a complete failure because his hands and fingers must be absolutely steady while he is at work. He is a doctor.

There is seldom found an employee who does not bring his home problems onto the job and when the problem is of such burdensome proportions that the man is going to think more about his trouble than he will his job and more than likely he will fail to observe a hazard and cause an accident of one kind or another unless he is given some relief in one form or another. Sickness and possibly death in the home, possible loss of home, financial burdens he is no longer able to carry and others. The need of assistance in one form or another when there is no one to give that assistance. The employee who is laboring under a great mental load is to be pitied and helped if it is possible to do so. Anyone working with energized conductors any place or working above ground level doing anything, who is worried nearly to death for any real or fancied reason is an unsafe man. He just can't keep his mind on the job because it is burdened with other matters and he is more likely to do the wrong thing than he is the right thing.

According to medical doctors "worry" has been the cause of more deaths than any other one form of sickness. I knew a man who was carrying a terrible financial load and he was not doing line work. He was an office man. He was so financially involved that he was going from one acquaintance to another trying to borrow any amount they would loan so he could pay some others who had previously loaned to him and were pressing

him for payment. One day this man was on top of a building to take some measurements. Instead of walking on the flat roof he walked on an 18" tile top parapet. Before he had completed the job he slipped off the parapet and fell a distance of about 70 feet. Here was a man performing a work he did not have to do at a place where he should not have been.

Before he became so involved in debts, his work was most satisfactory but mistakes resulting from bad judgement began to develop. He was quite forgetful and was getting behind in his work.

His supervisor had discussed the matter of replacing him about two months before this accident occured and had he been replaced it is possible that his life would not have been lost as it was.

The matter of child birth seldom disturbs a man who is already the father of several children. The occasion has become a habit and he is quite used to it and many look upon the event as just another mouth to feed. With the man having this experience for the first time it is quite a different story. As the birth day draws near some men are highly jubilant about the matter all the time and has to tell everyone he knows that he is soon to become a father; while some men are just in the reverse. They say nothing about the matter but their mind is terribly troubled and they may even get sick and loose weight.

In either case the expectant father is usually an unsafe man and he is liable to do something that will result in a serious accident.

When a man is in any kind of trouble it is quite natural for him to think about it and if he thinks about his trouble on the job he is going to neglect that job and anything could happen.

On actual tests it has been determined that one cannot do or think about two important things successfully at the same time. When one is working with energized lines and his life depends on his every move or operation, that is definitely not the time to have his mind on any other matter.

A mans attitude about his job has quite a bearing on how much interest he has in the work assigned to him.

Unfavorable attitudes leads him to ignore safety instructions, to take chances and develop unsatisfactory moral conditions among other workers. Failure to cooperate is one of the fruits of unfavorable attitudes and has often disturbed the supervisor to such an extent that causes him to make mistakes in giving instructions to his crew. Some people get considerable enjoyment in displaying an antagonistic attitude toward the supervisor and when this attitude registers on the supervisor in the form of an agrivation it gives this worker a feeling of superiority; a feeling that he should be made supervisor and such confusion would not exist.

A man who has had unsufficient experience in working with energized circuits not only makes trouble for himself but others as well. All too often men have been permitted to work energized lines long before they are ready for it. It has been said by one supervisor that he could make a capable lineman out of a new man in six months.

We doubt the wisdom of such an attempt and are of the opinion that on account of the many kinds of hazards involved in line work that it takes much longer for a safe lineman to be developed. Surely there have been a sufficient number of fatal and non-fatal injuries experienced by "would be" linemen, to convince the most skeptical that the short term training period is definitely wrong.

The man of little experience is a hazard within himself and any mistake on his part could and has proven to be the cause for injuries to other crew members. In the generation and distribution of electricity the training period never ends. The production of new and approved type of equipment frequently compels us to change our way of installation and so long as one remains in this line of work he must be in training.

Again referring to the list of so called underlying causes of accidents due to human failure we find such conditions as: 1. Poor physical conditions. 2. Use of defective or improper tools. 3. Poor planning. 4. Carelessness. 5. Haste. 6. Forgetfulness. 7. Lack of job knowledge. 8. Thoughtlessness. 9. Inexperience. 10. Poor supervision. 11. Lack of judgement. 12. Uncooperative attitude. 13. Outside worries. 14. Job pressure. 15. Disregard for safety. 16. Wrong or misplaced worker and others.

In analyzing an accident all to frequently we assign one or more of these as the cause when in reality the underlying cause should be charged to something that is primarily under the control of a human being.

If a man is thoughtless, if he uses poor judgement, if he has a poor attitude, the natural question would be why is he thus and so.

The science of human behavior teaches us that all behavior is caused, and that certain fundamental aspects influence human behavior. We have already mentioned a few of them referring in particular to such human factors as: 1. Attitudes. They can be cooperative, antagonistic, suspicious, open-minded or narrow-minded. 2. Human Abilities. Some people are more mechanically minded than others, 4. Fatigue. Both physical or mental. Where a worker has lost sleep his energy is spent and he is less alert. 5. Emotional Disturbance. Worry, anger, distractions, fear, hate. 6. Physical Condition. Ill, run-down, glandular unbalance. 7. Last but not least is that of Inexperience. A short training period does not give the new man sufficient time to form safe working habits and only time, careful supervisory instructions and repetition of a job will develop habits that are safe.

For every accident that is charged to an unsafe practice there is usually a reason behind the act recognized as a human factor.

It is quite difficult at times to detect them unless the supervisor decides to live very close to the men working under him, so close in fact that through his observation he can detect when something is wrong and that is the time to do something about it. Energized conductors is not the place for a man to work if his mind is not concentrated on what he is doing and how he is doing it.

Unsafe conditions have been overcome for most part, and they represent but a very small majority of occuring accidents. As the major portion of accidents occur as the result of unsafe practices and as we are

now able to pin point just a few of the causes for many unsafe practices it appears logical we should ferrit out, eliminate and educate against these personal human factors which cause so large a number of accidents.

PANEL SUMMARY ON TRENDS IN RURAL ELECTRIFICATION

A. E. Reid, Montana - "A growing trend in REA training, and, I feel it is not a good one, is the trend of managers to organize hot stick crews made up of men who are not ready to be put in hot stick crews."

G. E. Baker, Texas - "In 1936, 1937, 1938, most line work was built by private contractors. Outages were unimportant and emphasis has been on training and instruction solely. We must train some maintenance linemen instead of all construction. Maintenance costs can no longer be charged off in a coop's books as construction costs but must be paid for from revenue accounts."

Howard Gorham, Nebraska - "As a trend in Nebraska, we started with foremen training and advanced toward specialized training for the linemen on an area basis."

A. D. Mueller, Indiana - "There should be a trend to put some teeth into the safety program with reference to passive participation ... also more field men should be employed to assist Mr. Bidle, Mr. Shehee ... a trend should be to keep your sponsors informed of the importance of your program."

A. B. Shehee, Washington, D. C. - "Everyone should work toward the trend of better participation and cooperation of management and directors with the Job Training and Safety Program."

PANEL SUMMARY ON ADVISORY COMMITTEES

Opening Remarks of Chairman Hinton of Florida

The valve of a State Job Training and Safety Advisory Committee. What GOOD is it? Our job is to show you what <u>good</u> an REA Committee can be. Mr. A. E. Becker, made a good point when he said, "I do not believe that we ever want to get ourselves in the position where we can furnish this kind of program FREE." It is the investment or the financial interest our cooperatives have, through their advisory committees, that creates interest and active participation. In my opinion, this is the principle reason that has made this program so successful. Here I can't resist reminding you that I will always be very proud of having the opportunity of serving on the first job training and safety committee organized in Illinois and the United States. The idea of having an advisory committee is not well received because it is not commonly understood. There is not enough common understanding about the composition of its membership; it must be representative. Its intended purpose is advisory only. Its proper functions, helping with matters pertaining to training.

Key points stressed by the other members of the panel:

Bidle - Balance wheel - avenue channel of communication.
McCaskey - Connecting link between directorship and the training program.
Hinricks - Mouthpiece of man on the firing line - the foreman.
DeVaughn - Sounding board for customer reaction.
Wingo - A <u>must</u> which we cannot do without. It is the vehicle through which the vocational education carries out its responsibility.

QUESTION AND ANSWER SESSION

1. What disposition is to be made of the questions presented?

Answer
The answers are to be turned over to the 1951 planning committee.

2. Should it be the recommendation of this group that two men be sent on all service?

Answer
Alexander from Tennessee made a motion that there should be two men on a job that can climb on each call. It is going to be necessary to prove this to the Managers though in most cases.

After a discussion, Alexander changed the wording to "recommend that two who can climb be sent on all calls." This was seconded by Chester High of Ohio. On vote the motion unanimously carried.

In addition to increased safety for the men, this practice is economically justifiable in rural line work because of the long distances involved. Two men can often complete a job which one man could not do s afely by himself and thus save an extra trip.

3. When is a lineman too high on a pole carrying energized circuits?

Answer
When he is high enough if he should slip or make a false move he could accidently get on an energized primary he is now above the neutral conductor.

4. Should artificial respiration be practiced with hooks on?

Answer
If you are going to do artificial respiration with hooks on, you should practice it that way. Practice the way you would do in the actual case as some have been hurt in practice. If two or more men other than the one hurt or burned or on the job remove climbers before practicing artificial respiration, if only one person other than the injured is present do not wait to remove hooks but start immediately artificial respiration.
This was on vote unanimously carried.

5. Should linemen ever work above the neutral or an energized pole?

Answer
If you are above the neutral you could slip and fall and it is recommended you never work above the neutral or an energized line.

Answer (Continued)

If it were possible to work above it without any danger of falling, then linemen could work above it okay. Bidle says the bolt behind the insulator is dangerous and it should be permanently grounded before working above the neutral or should at least be sure and ground it if you are going to work. It should be grounded from bolt to bolt. He does not recommend working above the neutral. Some say extended dead-ends have encouraged linemen to work above the neutral. Staff said he would not recommend replacing dead-ends on hot lines. Stovall made a motion that they recommend that the extended dead-ends be removed from specifications. This was seconded by Alexander. Staff opposed to resolution and after further discussion and vote it 12 and 12 and did not carry but was thrown out. Mills from Texas made a motion to appoint a Committee to make a thorough study of all specification changes and the Committee write a detailed report on these changes in specifications and then send to all Instructors and let them vote by mail on any changes in specifications. This was seconded by Chambers of Louisiana. The Committee was then appointed as follows: Mills, Chairman; Joe Chambers from Louisiana, Chester High of Ohio, and Gill Mowers from North Dakota.

6. Should sessions be split up next year in special groups?

Answer

It was stated that next year the group may be split up and that the recommendations for specification changes should be carefully screened. It was further stated that there has never been any objection to discussing anything in the bull sessions, and also if held earlier some would be afraid of stepping on someones toes too early in the Conference. The question was turned over to the Planning Committee for next year.

7. Should energized parts be covered when tightning hardware?

Answer

He first stated there were two ways, you can take hot line tools and take it away from the hot line or above and work on it. The other way was to cover it up. After a discussion against this due to the hardware on the pole by Bidle it was decided to either move it up out of the way or kill the line. Do not cover it up.

8. How about a film exchange?

Answer

All instructors or representatives bring a list of their film to the Conference next year and a notation on what the film is about. Mills did not recommend an exchange of the film as they cost $150.00, but was in favor of exchanging information about a film so that another state could say whether they would need it in their state. LaMasters said that he would look into REA putting specifications in slides.

9. Should oil circuit reclosures be mounted directly on the pole on single phase lines?

Answer

Browner from Kentucky moved that present specifications be discontinued and direct pole mounting of this equipment be approved. Replogle of Colorado seconded the motion and it carried unanimously.

REPORT OF SPECIAL CONFERENCE OF STATE TRADE AND INDUSTRIAL PERSONNEL AND STATE R.E.A. PERSONNEL

Problems Discussed

1. Best methods of cooperation between R.E.A. and vocational education at State level. Should there be a working agreement; and if so, what should it contain?

   Draft a simple memorandum of agreement setting forth all conditions of operation. Develop strong interrelations at State level. Samples of agreements in other states to be sent to State personnel by Mr. Ross and Mr. Lamaster.

2. Ways in which the State Supervisor of Trade and Industrial Education can aid the State job trainer.

   More participation in conferences by Trade and Industrial Education people. More teacher training and conference leader training in the field to take the pressure off the annual conference program. Annual conferences are not planned to be complete but are demonstrations of techiques and at same time gives answers to come of the field problems. State Trade and Industrial Education personnel to go out in the field and give help on specific problems in addition to training in central locations.

3. R.E.A. program - a vocational training program or is it a safety program?

   More information and clarification needed regarding Trade and Industrial Education departments and functions. Job training and safety go hand in hand. Safety is an end product of good job training. Teach the safety that is necessary to perform any job correctly. General safety will follow.

4. Best method for paying salaries and travel of safety and job trainers from vocational funds.

   Travel expense should be handled separately from salary. In cases where a State salary schedule fixes a maximum for job trainers, the solution might be to classify them separately and permit the going salary scale for the craft to prevail.

5. How can we secure the interest and cooperation of R.E.A. management in training their own workers as instructors?

6. How overcome managers' objections to statewide foremen's training conferences? In other fields, men - when at conferences - have compared aspects of their jobs and have become dissatisfied knowing of something better. Some managers fear unionization.

   Every interested agency and man has the job of making effective services available and worthwhile. Some fears have been dissipated by reason of good outcome in conferences. Clear concise reports of conferences should be made and sent to R.E.A. managers. No one can build a wall around a co-op. Troubles arise out of misunderstanding. Any difficulties as to purpose and operation should be cleared away early by all possible methods.

7. Should some sort of clearing house be established to assist States in securing R.E. instructors? How could this best be done?

Get recommendations from sources who know qualities of applicants. Exhaust all recruiting possibilities.

8. For purposes of job description, what are the duties, activities, aspects, relationships, and responsibilities of the job training instructor?

Attempts are being made now to describe this accurately. If all concerned will cooperate by returning forms and questionnaires, such work will be speeded.

9. How can we secure the interest of the R.E. workers and management in the technical and related training part of the program?

Changing from the construction phase to one of operation in rural electrification is solving this problem. Remaining workers are seeking self-improvement.

10. How much training is required in the R.E.A. program? When is a rural electrification worker trained, or does the program continue forever?

Continuous training is necessary.

11. If R.E. construction is the same throughout the Nation, why isn't a a committee set up from labor-management to establish courses of study for the Nation? In this way, instructors could be employed in any State regardless of where training was received.

Differences are great in states and areas and the program does not yet lend itself to high standardization.

12. How can a program of construction, duplication and exchange of instructional materials be made possible among the States?

Some exchange of materials and information is now going on. Needs to be constantly stimulated by all agencies in program. Records and reports of past achievements in programs should be kept and passed on. The U. S. Office of Education has tried to be clearing house but system broke down because materials were either not sent in from the States or not in sufficient quantities. The U. S. Office of Education offers continued service and will prepare an exhibit for the next annual conference. States to get single copies of material together and prepare complete bibliography with sources for this purpose.

13. Should a basic course in electricity be developed and taught to cooperative line personnel? (organization and content)

Yes, this seems worthwhile. (1) Members of the group recommend use of Delmar Publishing Co., New York, "Principles of Electricity for Utility Employees" at $10.40. This is loose leaf. (2) Publish this kind of information in "The Lineman." (3) "Basic Electricity" Chas. A. Bennett, Publishing Company or Manual Arts Press, Peoria, Illinois.

14. Should a course in basic electricity be prerequisite to technical courses in operation and maintenance of equipment?

15. How far can we go in giving technical training to qualified, experienced linemen-foremen who have had little or no high school education?

Tie it in - stronger motivation - go as far as you can over a long period of time.

BUSINESS SESSION
Friday, Oct. 27, 1950

Presiding - H. C. Potthast

The first item discussed by the group was a simple set of rules by which the annual National Job Training and Safety Conference would be conducted. Copies of a recommended plan were distributed and the Chair read it to those assembled; it was as follows:

1. There will be one national Rural Electrification Job Training and Safety Conference held annually, sponsored jointly by the Rural Electrification Administration and the U. S. Office of Education.

2. In odd years, the conference will be held in Washington, D. C. In even years, the Conference will be held at some other suitable location in the United States - to be determined by the members of the current Program Planning Committee.

3. In the years the Conference is held in Washington, D. C., the headquarters and meeting place will alternate between the U. S. Department of Agriculture building and the Federal Security Agency building.

4. The Program Planning Committee is primarily responsible for planning the Conference program. This Committee will consist of six members - four of whom shall be State R.E.A. job trainers. Two continuing members will be named - one each from the Trade and Industrial Education Service of the Vocational Division of the U. S. Office of Education, and the Job Training and Safety Section, Management Division, of the Rural Electrification Administration. The sixth member is the retiring chairman of the Committee.

5. Each year three members will be elected to the Program Planning Committee from the State R.E.A. job trainer group. No job trainer shall serve on the Committee more than two consecutive years. This election shall take place at a regular business session of those present during the annual national Rural Electrification Job Training and Safety Conference.

6. A Chairman and secretary-treasurer of the Program Planning Committee shall be chosen from the job trainers on the Committee by the members of the Committee.

7. Vacancies occuring on the Committee shall be filled through appointment by the chairman after conferring with the other members of the Program Planning Committee.

8. There shall be six advisers to the Program Planning Committee named from different parts of the country - three to be appointed from State trade and industrial education personnel by the Trade and Industrial Education Service of the Vocational Division of the U. S. Office of Education, and

three to be appointed from State R.E.A. committees by the Job Training and Safety Section, Management Division of the Rural Electrification Administration. These six persons have no vote and serve in an advisory capacity only.

It was moved by High of Ohio, seconded by Strong of Illinois, and carried unanimously that the above set of rules be adopted for conducting future conferences.

A discussion was held in regard to holding a joint conference with the National Safety Conference and it was stated that it was doubtful if this could be arranged. High of Ohio moved and Blacklock from Missouri seconded that this resolution be reworded to read - work with the National Safety Council.

The proposed resolution to change the date of our annual conference was then discussed. The discussion brought out that changing our dates would prevent many instructors from attending the National Safety Congress. It was moved by Baker of Texas and seconded by Alexander of Tennessee that this resolution be withdrawn and the conference dates not changed.

It was moved by Mills of Texas, seconded by Stovall of Mississippi, and passed that all other resolutions be unanimously accepted as read.

The desirability of displaying teaching aids and other instructional material at the NRECA Convention in Cleveland was discussed. The re-action was favorable. Herman Potthast of Wisconsin was instructed to write officials of the NRECA to see if display space would be provided. All State instructors were requested to send information or suggestions regarding the exhibit to Herman Potthast. The motion to secure this space was made by Baker of Texas, seconded by Brawner of Kentucky, and passed unanimously.

The nominating committee recommended the names of Edwards of Alabama (ch), Langston of Georgia and Kellogg of Indiana as the three new members of the Program Planning Committee for the 1951 National Rural Electrification Job Training and Safety Conference. Upon motion of Alexander of Tennessee, seconded by Stovall of Mississippi, this report was adopted. It was understood that H. C. Potthast, W. A. Ross and Frank LaMaster would serve with the three named in accordance with the operating rules just adopted.

Letters were read from Ben Harris of Alabama and John TePoorten of Wisconsin.

Chester High gave a short summary of the conference.

The meeting was adjourned at 2 P.M.

(Compiled from notes taken by J. C. Staff)

REPORT OF RESOLUTION COMMITTEE

I. BE IT RESOLVED by the National Conference of Job Training and Safety Instructors that this organization go on record as extending its most sincere appreciation to the Illinois Rural Electrification Job Training and Safety Committee, the Illinois Department of Vocational Education, and the Illinois State Managers Association for their splendid hospitality and efforts in making this a most successful and profitable conference.

II. BE IT RESOLVED that the National Conference of Job Training and Safety Instructors go on record as extending most sincere appreciation to the United States Office of Education and to the officials of the Rural Electrification Administration for their most valuable contribution in preparation for and conducting of this conference.

III. WHEREAS the Rural Electrification Administration has created a new section of operation and maintenance, and

WHEREAS many of the problems of the Job Training and Safety Instructors will be closely related to the work of this section,

BE IT RESOLVED that our organization go on record as advocating close cooperation and coordination between this new section and the instructors in the various states, and

BE IT FURTHER RESOLVED that a request be made to Mr. C. L. Schultz to inform members of this organization of ways and means to accomplish this cooperation and coordination.

IV. WHEREAS various Job Training and Safety Instructors have expressed a need for more information on accident statistics,

BE IT RESOLVED by this organization that a request be forwarded to the Rural Electrification Administration for additional information and periodic reports on this topic.

V. WHEREAS the Job Training and Safety Instructors fully appreciate that the Rural Electrification Administration has been interested in the Job Training and Safety Program from its inception, and has rendered valuable assistance in formulating and promoting its development, and

WHEREAS a small minority of the Rural Electric Cooperatives are not fully cooperating with the program, and

WHEREAS the advisory influence of the Rural Electrification Administration is highly respected,

BE IT RESOLVED that this Conference would greatly appreciate any additional emphasis upon the value and need of a job training and safety program that might be directed by the Rural Electrification Administration to the management of the various cooperatives.

VI. WHEREAS many Rural Electrification Job Training and Safety Instructors and a large number of the organizations which they serve are members of the National Safety Council, and

WHEREAS this organization is national in scope, serving some 40 states, and is the largest coordinated training unit for safety in the electric utility field, and

WHEREAS the objectives of this organization parallel those of the National Safety Council,

BE IT RESOLVED that the National Safety Council be apprized of these facts, and

BE IT FURTHER RESOLVED that this organization would greatly appreciate assistance and cooperation of the National Safety Council at our Annual Conferences, and

BE IT FURTHER RESOLVED that the National Safety Council be asked to give recognition to this organization by adapting a part of their program at the National Safety Council Meeting to problems of rural electrification.

VII. WHEREAS some states are just initiating a Job Training and Safety Program, and

WHEREAS there is some variation in standard practices in the various states,

BE IT RESOLVED that this organization form a Committee to devise a generalized pattern of safety rules and standard practices.

VIII. WHEREAS the poles at circuit reclosures and cutouts are subjected to considerable gaffing, resulting in the hazard of cutouts by linemen,

BE IT RESOLVED that this organization go on record as favoring the installation of permanent pole steps above reaching level and removable pole steps at lower levels on such poles.

ATTENDENCE

1. C. G. Alexander, Instructor, Alcoa, Tennessee
2. D. W. Aiken, Dean, Student Affairs, State College, Mississippi
3. Andy Anderson, A. B. Chance Co., Centralia, Missouri
4. Walter M. Arnold, State Supervisor, Stillwater, Oklahoma
5. E. H. Bastedo, Anaconda Wire & Cable Co., Chicago, Illinois
6. G. E. Baker, Instructor, Creso, Texas
7. Earl S. Baird, REA Co-ordinator, Iowa
8. Norman F. Baldwin, Ohio Safety Committee, Napoleon, Ohio
9. A. P. Barbieur, General Foreman, Paxton, Illinois
10. A. C. Barnes, Manager, MJM Electric Co-op, Carlinville, Illinois
11. George D. Bicknell, Director of Safety & Training, Sante Fe, New Mexico
12. A. E. Becker, Mgr., State Association, Springfield, Illinois
13. D. B. Bidle, REA Safety & Job Trainer, Washington, D. C.
14. Wayne W. Black, Co-ordinator REA Safety & Job Training, Ogala, Florida
15. Jay Blanton, A. B. Chance, Chicago, Illinois
16. H. W. Bodendick, Bodendick Tool Co., Taylorville, Illinois
17. K. J. Bradley, Safety Instructor, Little Rock, Arkansas
18. H. E. Brawner, Safety Instructor, Bowling Green, Kentucky
19. Hugh E. Burke, Instructor, Menomie, Wisconsin
20. A. B. Blacklock, Instructor, St. Louis, Missouri
21. Lewis Brown, R.E.A. Manager, Albert Lea, Minnesota
22. Elmo Cates, Manager, Clay Electric Co-op, Flora, Illinois
23. Fay. A. Callahan, Supt. of Construction, Houma, Louisiana
24. Joe W. Chambers, Instructor, Louisiana
25. E. M. Claude, Supt. Vocational Education, Springfield, Illinois
26. Howard E. Clements, Kearney Corp., St. Louis, Missouri
27. Dean Coffman, REA Management Div., Decatur, Illinois
28. E. C. Collier, Ass't. Reg. Head, Mgt. Div. of REA, Springfield, Ill.
29. H. D. Cudworth, City Water, Light & Power, Springfield, Illinois
30. O. J. Chaney, Mgr. Fairfield, Illinois
31. James L. Counts, Instructor, Prosperity, South Carolina
32. George Ditlow, Head Operating Problems Sect., Washington, D. C.
33. W. C. Dunigan, REA Instructor, Burgau, North Carolina
34. E. C. Edwards, Instructor, Alabama
35. Earl F. Ehlers, Instructor, Barbaboo, Wisconsin
36. Arthur A. Everett, Dist. Safety Engineer, Bureau of Reclamation, Mont.
37. James L. Erwin, Line Foreman, Flora, Illinois
38. Thomas A. Findlay, Instructor, Minnesota
39. R. S. Ferguson, A. B. Chance Co., Centralia, Missouri
40. T. F. Fieker, Manager, Bloomfield, Iowa
41. C. E. Funk, Ass't. Supt. Trade & Ind. Ed., St. Paul, Minn.
42. Gene Gerlach, Line Supt. St. Ansgar, Iowa
43. Howard Gorham, Supervisor, Trade & Ind. Ed., Lincoln, Nebraska
44. H. A. Gruetzmacher, Training Supervisor, Des Moines, Iowa
45. Ed Gunning, Superintendent, Alma, Wisconsin
46. Thomas Gray, Instructor, York, Nebraska
47. George Hall, REA Engineer, Washington, D. C.
48. Chester A. High, Supervisor, Columbus, Ohio
49. J. E. Hill, Director of Board of Voc. Education, Springfield, Illinois
50. H. S. Hoiberg, Training Officer, REA, Washington, D. C.

51. Al Hinrichs, Line Foreman, Menard Elect. Petersburg, Illinois
52. Galen Hessler, Line Supt., Arcadia, Wisconsin
53. W. M. Hicks, Ass't. State Supervisor, Atlanta, Georgia
54. David K. Hill, Supt. of Operations, Hartsalla, Alabama
55. H. F. Hinton, State Supervisor T & I, Florida
56. Everett S. Hoy, Manager, Hamilton, Ohio
57. Ed Kellogg, Instructor, Goodland, Indiana
58. James M. Kiley, Instructor, Aberdeen, South Dakota
59. Ed Kerlick, Instructor, Texas
60. Anthony L. Kramer, Instructor, Texas
61. Harvey E. Kapphahn, Safety Supervisor, Lansing, Michigan
62. Lee Leonard, General Line Foreman, Illinois
63. Bruce Lobdill, A. B. Chance, Centralia, Missouri
64. Frank H. LaMaster, Safety Engineer, REA, Washington, D. C.
65. John E. Lane, Safety Supervisor, Oklahoma
66. Alvin A. Long, Lineman, Steeleville, Illinois
67. J. L. Langston, Instructor, Austall, Georgia
68. I. Thomas McKillop, Chief Mgt. Div. REA, Washington
69. Delmar Marshall, Line Foreman, Mattoon, Illinois
70. L. C. Marvel, Mgr., Carthage, Illinois
71. L. C. Meyer, Safety Eng., Wausau, Wisconsin
72. W. W. Mills, Chief Rural Elec. Training, Texas
73. G. H. Mowers, Supervisor, Fargo, North Dakota
74. D. C. Mohler, REA Field Eng., Peoria, Illinois
75. A. D. Mueller, Mgr. Indiana Statewide, Indianapolis, Indiana
76. Welfred R. Newyard, Line Supt., Kelispell, Montana
77. Joseph E. O'Brien, Technical Standards Div. REA, Washington, D. C.
78. H. C. Potthast, Instructor, Minomonie, Wisconsin
79. Jack Prevo, Lineman, Mattoon, Illinois
80. H. G. Pruett, Safety Director, Chattanooga, Tennessee
81. Elmer Rutzen, Line Supt. Tyler, Minnesota
82. E. A. Reid, Instructor, Billings, Montana
83. Clarence E. Replogle, Instructor, Columbus, Nebraska
84. J. M. Ray, Field Representative, REA, Illinois
85. W. A. Ross, Consultant, U. S. Office of Education, Washington, D. C.
86. R. E. Reeman, Lineman, Bloomington, Illinois
87. Delmar Shafer, Lineman, Mattoon, Illinois
88. C. L. Schultz, Head, Tech. Oper. & Maint. Sect. REA, Washington, D. C.
89. John A. Schwenke, Line Material Co. Milwaukee, Wisconsin
90. A. B. Shehee, Safety Engineer, REA, Washington, D. C.
91. Chester Strait, Safety Director, Iowa
92. John H. Sanderson, Instructor, Knoxville, Tennessee
93. John M. Shriver, Gen. Foreman, Steeleville, Illinois
94. Harry N. Simpson, Instructor,Camdenton, Mo.
95. Kenneth Slater, System Engineer, Paxton, Illinois
96. Joe C. Staff, Instructor, Manhattan, Kansas
97. Robert Stanley, Line Foreman, Elizabeth, Illinois
98. Donald J. Sweehey, Supervisor, Lancaster, Wis. (Dairyland Power Co-op)
99. Glenn Strong, Instructor, Illinois
100. E. H. Stovall, Instructor, State College, Mississippi
101. H. B. Taenzer, Bodendieck Tool Co., Taylorville, Illinois
102. John W. Taylor, City Water, Light & Power, Springfield, Illinois
103. Paul B. Trew, Instructor, Nashville, Tennessee
104. W. F. Turner, Bodendieck Tool Co., Taylorville, Illinois

105. E. L. Vander Linden, Line Supt., Bottuneau, North Dakota
106. W. L. DeVaughan, Safety Supt., Statesville, North Carolina
107. R. L. Welch, Chief, Voc. Ed., Madison, Wisconsin
108. Ralph V. White, Mgr., Divernon, Illinois
109. Harold Whitman, NRECA Director, Illinois
110. Marion M. Wilson, Mgr. Fort Morgan, Colorado
111. L. L. Wingo, State Board Voc. Education, Springfield, Illinois
112. Merton Wheeler, Supervisor Ind. Education, Jefferson City, Mo.
113. Jack Wood, Line Supt., Albert Lee, Minnesota
114. Seth Ward, Supt. of Operations, Hartford, Alabama
115. J. T. Wright, REA Field Eng., Baraboo, Wisconsin
116. H. E. Zahller, Line Foreman, Huntley, Montana
117. Charles Youtzy, Mgr. Elizabeth, Illinois